QB
1
A88
v.24

THE ASTROPHYSICAL JOURNAL

Supplement Series

no. 203-212
Science
Engineering

PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS FOR
THE AMERICAN ASTRONOMICAL SOCIETY

HELMUT A. ABT, *Managing Editor*
Kitt Peak National Observatory

DIMITRI MIHALAS, *Associate Managing Editor*
High Altitude Observatory

EDITORIAL BOARD

SIDNEY VAN DEN BERGH (1972–76)
David Dunlap Observatory

ALAN H. BARRETT (1971–75)
Massachusetts Institute of Technology

HERBERT FRIEDMAN (1970–74)
U.S. Naval Research Laboratory

MAARTEN SCHMIDT (1969–73)
California Institute of Technology

L. WOLTJER (1968–72)
Columbia University

Production Manager: ELMARS BILSENS

Copy Editor: JEANNE HOPKINS

* * *

VOLUME 24

SUPPLEMENT NOS. 203–212 (JANUARY 1972–OCTOBER 1972)

PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS FOR
THE AMERICAN ASTRONOMICAL SOCIETY

© 1972 BY THE AMERICAN ASTRONOMICAL SOCIETY. ALL RIGHTS RESERVED.

PUBLISHED IRREGULARLY

COMPOSED AND PRINTED BY THE UNIVERSITY OF CHICAGO PRINTING DEPARTMENT
CHICAGO, ILLINOIS, U.S.A.

CONTENTS OF VOLUME 24

THE PARKES SURVEY OF 21-CENTIMETER ABSORPTION IN DISCRETE-SOURCE SPECTRA. I. THE PARKES HYDROGEN-LINE INTERFEROMETER
V. Radhakrishnan, J. W. Brooks, W. M. Goss, J. D. Murray, and U. J. Schwarz 1

THE PARKES SURVEY OF 21-CENTIMETER ABSORPTION IN DISCRETE-SOURCE SPECTRA. II. GALACTIC 21-CENTIMETER OBSERVATIONS IN THE DIRECTION OF 35 EXTRAGALACTIC SOURCES
V. Radhakrishnan, J. D. Murray, Peggy Lockhart, and R. P. J. Whittle 15

THE PARKES SURVEY OF 21-CENTIMETER ABSORPTION IN DISCRETE-SOURCE SPECTRA. III. 21-CENTIMETER ABSORPTION MEASUREMENTS ON 41 GALACTIC SOURCES NORTH OF DECLINATION −48° . . . . . V. Radhakrishnan, W. M. Goss, J. D. Murray, and J. W. Brooks 49

THE PARKES SURVEY OF 21-CENTIMETER ABSORPTION IN DISCRETE-SOURCE SPECTRA. IV. 21-CENTIMETER ABSORPTION MEASUREMENTS ON LOW-LATITUDE SOURCES SOUTH OF DECLINATION −46° . . . . . W. M. Goss, V. Radhakrishnan, J. W. Brooks, and J. D. Murray 123

THE PARKES SURVEY OF 21-CENTIMETER ABSORPTION IN DISCRETE-SOURCE SPECTRA. V. NOTE ON THE STATISTICS OF ABSORBING H I CONCENTRATIONS IN THE GALACTIC DISK
V. Radhakrishnan and W. M. Goss 161

SPECTROPHOTOMETRY OF THE BETA CEPHEI STARS . . . . . R. D. Watson 167

NON-LTE MODEL ATMOSPHERES. VII. THE HYDROGEN AND HELIUM SPECTRA OF THE O STARS
L. H. Auer and Dimitri Mihalas 193

THE ATMOSPHERES OF THE F-TYPE SUPERGIANTS. I. CALIBRATION OF THE LUMINOSITY-SENSITIVE O I λ7774 LINE . . . . . Patrick S. Osmer 247

THE ATMOSPHERES OF THE F-TYPE SUPERGIANTS. II. THE LINE AND CONTINUOUS SPECTRA
Patrick S. Osmer 255

THERMONUCLEAR DETONATION AND BETA-INDUCED REIMPLOSION OF DENSE STELLAR CORES
Stephen W. Bruenn 283

LINEAR PULSATIONS AND STABILITY OF DIFFERENTIALLY ROTATING STELLAR MODELS. I. NEWTONIAN ANALYSIS . . . . . Bernard F. Schutz, Jr. 319

LINEAR PULSATIONS AND STABILITY OF DIFFERENTIALLY ROTATING STELLAR MODELS. II. GENERAL-RELATIVISTIC ANALYSIS . . . . . Bernard F. Schutz, Jr. 343

NEAR-INFRARED PHOTOMETRY OF MIRA VARIABLES . . . . . G. W. Lockwood 375

A PHOTOELECTRIC STUDY OF MESSIER 81
John C. Brandt, J. Keith Kalinowski, and Robert G. Roosen 421

COMPUTER SOLUTION OF ECLIPSING-BINARY LIGHT CURVES BY THE METHOD OF DIFFERENTIAL CORRECTIONS . . . . . Deanne D. Proctor and Albert P. Linnell 449

PLANE-SYMMETRIC POLYTROPIC FUNCTIONS . . . . . Thomas F. Tascione 479